WE CLAIM:

1. A method for the production of glass suitable for use in an optical fiber, comprising:

dissolving an optically active component in a solvent to form a solution;

mixing the solution and a powder substrate, wherein the powder substrate is insoluble in the solvent; and

melting the solution and powder substrate to form glass at a temperature or temperature range that causes melt viscosities at less than or equal to 100,000 poise.

2. A method according to Claim 1, further comprising drying the solvent and powder substrate prior to melting the powder substrate.

3. A method according to Claim 2, further comprising decomposing the optically active component.

4. A method according to Claim 1, wherein the optically active component is in a precursor form.

5. A method according to Claim 4, wherein a co-dopant is added to the solution.

6. A method according to Claim 5, wherein the precursor is an organic salt, inorganic salt, or organometallic compound.

7. A method according to Claim 6, wherein the precursor is a nitrate, sulfate, halide, formate, acetate, oxalate, alkoxide, or Grinard reagent.

8. A method according to Claim 7, wherein the solvent is a member of the group consisting of: water, alcohol, ketone, aldehyde, organic acid, inorganic acid, base, liquid ammonium, or molten salt.

9. A method according to Claim 1, wherein the powder substrate has a particle size of about 50 to about 1200 mesh.

10. A method according to Claim 9, wherein the mass ratio of solution to powder is from about 0.5 to about 10.

11. A method according to Claim 1, wherein the powder substrate is a powdered oxide, halide, chalcogenide, or any combination thereof.

12. A method according to Claim 1, wherein the powder substrate comprises crushed or milled glass or powder.

13. A method according to Claim 1, wherein the ratio of melt viscosity to melt duration is 25.

14. A method according to Claim 1, wherein the optically active ion is an ion of a rare earth element.

15. A method according to Claim 14, wherein the optically active ion is an ion of erbium, praseodymium, neodymium, europium, terbium, dysprosium, holmium, thulium or ytterbium.

16. A method according to Claim 1, wherein the optically active ion is a transition metal.

17. A method according to Claim 16, wherein the optically active ion is an ion of titanium, vanadium, chromium or nickel.

18. A method according to Claim 1, wherein the temperature or temperature range causes melt viscosities at less than or equal to 20,000 poise.

19. A method according to Claim 1, wherein the temperature or temperature range causes melt viscosities at less than or equal to 2,000 poise.

20. A method according to Claim 1, wherein no more than 10% of the powder substrate dissolves in the solvent.

21. A method according to Claim 20, wherein no more than 1% of the powder substrate dissolves in the solvent.

22. A glass produced by the method of Claim 1.

23. An optical fiber comprising the glass of Claim 22.

24. An optical fiber comprising optically active ions having an unbleachable loss of 1% or less of the peak of absorption.

25. An optical fiber according to Claim 24, wherein the unbleachable loss is 0.25% or less.

26. A method for the production of composition suitable for melting into a glass suitable for use in an optical fiber, comprising:

dissolving an optically active component in a solvent to form a solution, wherein the optically active component is soluble in the solvent; and

mixing the solution and a powder substrate, wherein the powder substrate is insoluble in the solvent.

27. The composition produced by the method of Claim 26.